



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: RB211-535C
 UNIQUE ID NUMBER: 1RR012
 COMBUSTOR:
 ENGINE TYPE: TF

BYPASS RATIO: 4.5
 PRESSURE RATIO (π_{00}): 21.5
 RATED THRUST (F_{00}) (kN): 163.3

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	4.0	40.3	60.4	8.8
AS % OF ORIGINAL LIMIT	20.2	34.2	72.7	42.5
AS % OF CAEP/2 LIMIT (NO _x)			90.9	
AS % OF CAEP/4 LIMIT (NO _x)			113.1	
AS % OF CAEP/6 LIMIT (NO _x)			128.5	
AS % OF CAEP/8 LIMIT (NO _x)			158.3	

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES
 - DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	1.800	0.25	0.70	33.71	8.0
CLIMB OUT	85	2.2	1.470	0.14	0.27	24.89	7.0
APPROACH	30	4.0	0.540	0.44	0.48	6.37	4.4
IDLE	7	26.0	0.200	1.44	18.79	3.44	2.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			711	552	6030	9277	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				3.4	37.3	57.0	8.0
SIGMA (D _p /F ₀₀ in g/kN, or SN)				0.4	2.6	2.0	3.0
RANGE (D _p /F ₀₀ in g/kN, or SN)				3-3.8	35.5-40.3	54.1-58.7	4.6-10.1

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	
TEMPERATURE (K)	281-287
ABS HUMIDITY (kg/kg)	0.004-0.005

FUEL

SPEC	AVTUR
H/C	1.91
AROM (%)	20

MANUFACTURER: Rolls-Royce plc
 TEST ORGANIZATION: Rolls-Royce Ltd
 TEST LOCATION: SINFIN-Derby
 TEST DATES: 01/04/1984-01/05/1984

REMARKS

1. Data from certification report CRR58085

Compliance with Fuel Venting requirements: - ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)